



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Katherine R. Miclau	Project Number J2125
Project Title An Egg White's Initial Temperature Affects Its Volume and Stability After Beating	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine how an egg white's initial temperature affects its volume and stability after beating.</p> <p>Methods/Materials Groups of 3 eggs were brought to 4 different temperatures (40°, 50°, 60° and 70°). The egg whites were separated, their volumes were measured (to 105 mL), and they were beaten to a good foam. After beating, the egg white volumes were remeasured and the egg whites were allowed to sit for one hour, after which physical observations of foam quality were recorded. Each experiment was repeated five times.</p> <p>Results The results indicated that the warmer the egg white, the larger its volume when beaten to a "good foam." Colder egg whites stay more moist and elastic after beating compared to warmer ones. Additionally, the foams of colder egg whites did not collapse as much as those of the warmer egg whites.</p> <p>Conclusions/Discussion Under physical observation, colder egg whites stay more moist and elastic compared to warmer ones, which dry out and are more fragile over time. If the goal is to get as much volume as possible by beating an egg white, then room temperature eggs should be used. However, if one wants a more stable egg white foam that is less likely to collapse when incorporated in a recipe, as is often desired in baking, then cold eggs should be used.</p>	
Summary Statement This project evaluates how an egg white's initial temperature affects its volume and stability after beating.	
Help Received My mother showed me how to separate eggs more easily, and helped me assemble the materials for the project (bought the eggs). My father taught me how to make graphs and proof-read my poster.	